

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Canceled) An air manager system for a metal air cell comprising:
 - (a) a housing having an air mover and an air outlet opening;
 - (b) a cartridge that is removable from said housing, said cartridge having first and second ends, first and second sides, and
 - (i) a metal air cell;
 - (ii) an air inlet opening located toward said first end of said cartridge and adjacent to said first side of said cartridge;
 - (iii) an air outlet opening located toward said second end of said cartridge and adjacent to said second side of said cartridge;
 - (iv) a first diffusion tube communicating with said air inlet opening of said cartridge, said first diffusion tube extending along said first side of said cartridge;
 - (v) a second diffusion tube communicating with said air outlet opening of said cartridge, said second diffusion tube extending along said second side of said cartridge;
 - (vi) a first distributor tube communicating with said first diffusion tube, said first distributor tube extending from said first diffusion tube along said first side of said cartridge through a change of direction and being adjacent to an air plenum, said first distributor tube including a plurality of openings communicating with said air plenum; and
 - (vii) a second distributor tube communicating with said second diffusion tube, said second distributor tube extending from said second diffusion tube along said second side of said cartridge through a change of direction and being adjacent to said air plenum, said second distributor tube including a plurality of openings communicating with said air plenum.
2. (Canceled) The air manager system of claim 1, wherein said cartridge further comprises
 - (a) a first panel defining said openings of said first distributor tube, wherein said first panel includes a ridge, and wherein said first panel and said ridge form two walls of said first diffusion tube and two walls of said first distributor tube; and
 - (b) a second panel defining said openings of said second distributor tube, wherein said second panel includes a ridge, and wherein said second panel and said ridge form two walls of said second diffusion tube and two walls of said second distributor tube.

3. (Canceled) The air manager system of claim 1, wherein said diffusion tubes, said distributor tubes, and said openings cooperate to define a plurality of air flow paths through said cartridge, all of said paths being substantially equal in length.

4. (Canceled) The air manager system of claim 1, wherein said air mover in said housing moves air into said air inlet opening of said cartridge.

5. (Canceled) The air manager system of claim 4, wherein said air mover is a blower.

6. (Canceled) The air manager system of claim 1, wherein said air mover in said housing extracts air from said air outlet opening of said cartridge.

7. (Canceled) The air manager system of claim 1, wherein said diffusion tubes are sized to permit an air flow rate therethrough of less than about 3.46×10^{-2} L/hour when said air mover is off.

8. (Canceled) The air manager system of claim 7, wherein said diffusion tubes are sized to permit an air flow rate therethrough of less than about 3.46×10^{-3} L/hour when said air mover is off.

9. (Canceled) The air manager system of claim 1, wherein each of said diffusion tubes has a cross-sectional area of about 1 mm² to about 8 mm² and a length of about 10 mm to about 70 mm.

10. (Canceled) The air manager system of claim 1, wherein said cartridge comprises a plurality of metal air cells.

11. (Canceled) The air manager system of claim 10, wherein said cells are positioned in stacks, and wherein each stack includes 2 cells that are spaced apart vertically to define an air flow path therebetween.

12. (Canceled) The air manager system of claim 11, wherein said cartridge comprises two stacks of cells, wherein said stacks are spaced apart horizontally.

13. (Canceled) The air manager system of claim 10, wherein said cells cooperate to define a battery that delivers a current of at least 300 mA when said air mover is on.

14. (Canceled) The air manager system of claim 13, wherein said cells cooperate to define a battery that delivers a current of at least 500 mA when said air mover is on.

15. (Canceled) The air manager system of claim 14, wherein said cells cooperate to define a battery that delivers a current of at least 1000 mA when said air mover is on.

16. (Canceled) The air manager system of claim 15, wherein said cells cooperate to define a battery that delivers an average current of about 1700 mA when said air mover is on.

17. (Canceled) The air manager system of claim 13, wherein said battery has an output current density of about 1 to 200 mA/cm² of air cathode surface when said air mover is on.

18. (Canceled) The air manager system of claim 17, wherein said battery has an output current density of about 10 to 110 mA/cm² of air cathode surface when said air mover is on.

19. (Canceled) The air manager system of claim 1, wherein said air mover generates an air flow rate through said cartridge of about 0.04 to 40 L/hour.

20. (Canceled) The air manager system of claim 19, wherein said air mover generates an air flow rate through said cartridge of about 4 to 40 L/hour.

21. (Canceled) The air manager system of claim 1, wherein said housing and said cartridge are configured such that when said cartridge is placed in said housing, said air outlet opening in said housing and said air inlet opening in said cartridge are substantially aligned.

22. (Canceled) The air manager system of claim 21, wherein said housing further comprises a cartridge release element that allows air to exit said housing.

23. (Canceled) The air manager system of claim 22, wherein said cartridge further comprises a locking tab that is configured to interlock with said cartridge release element.

24. (Canceled) An air manager system for a metal air cell comprising:
 (a) a housing having an air mover and an air outlet opening;
 (b) a cartridge that is removable from said housing, said cartridge having
 (i) a metal air cell;
 (ii) an air inlet opening;
 (iii) an air outlet opening;
 (iv) a first diffusion tube in communication with said air inlet opening and a second diffusion tube in communication with said air outlet opening;
 (v) a first distributor tube in communication with said first diffusion tube and a second distributor tube in communication with said second diffusion tube; and
 (vi) a first panel defining a plurality of openings communicating with said first distributor tube and a second panel defining a plurality of openings communicating with said second distributor tube,

wherein said diffusion tubes, said distributor tubes, and said openings cooperate to define a plurality of air flow paths from said air inlet opening of said cartridge, through said cartridge, to said air outlet opening of said cartridge, all of said paths being substantially equal in length.

25. (Canceled) A method for controlling air flow in a metal air battery comprising:
(a) confining at least one metal air cell within a cartridge, said cartridge having an air inlet opening and an air outlet opening; and
(b) moving air through any of a plurality of air flow paths within said cartridge, wherein each of said paths passes through said air inlet opening of said cartridge, through a diffusion tube, through a distributor tube, across an active surface of a cell, and through said air outlet opening of said cartridge,
and wherein all of said paths are substantially equal in length.

26. (Canceled) The method of claim 25, wherein each of said air flow paths passes through two diffusion tubes and two distributor tubes.

27. (Canceled) The method of claim 25, wherein each of said air flow paths passes through an opening in a panel.

28. (Canceled) The method of claim 25, wherein air is moved through said cartridge by an air mover exterior to said cartridge.

29. (Canceled) The method of claim 28, wherein said air mover pushes air into said cartridge.

30. (Canceled) The method of claim 29, wherein said air mover extracts air from said cartridge.

31. (Canceled) The method of claim 25, wherein step (b) includes moving air through a diffusion tube, changing the direction of air flow 180°, then moving air through a distributor tube.

32. (Canceled) The method of claim 31, wherein step (b) includes moving air through a diffusion tube, changing the direction of air flow 180°, moving air through a distributor tube, changing the direction of air flow 90°, then moving air across an active surface of a metal-air cell.

33. (New) A method for controlling air flow in a metal air battery, the method comprising:

- (a) confining at least one metal air cell within a cartridge, the cartridge having an air inlet opening and an air outlet opening; and
- (b) moving air through any of a plurality of air flow paths within the cartridge,

wherein each of said paths passes through said air inlet opening of said cartridge, through a diffusion tube, through a distributor tube, across an active surface of at least one of metal air cell, and through said air outlet opening of said cartridge,

wherein all of said paths pass through the same distributor tube and are substantially equal in length, and wherein step (b) includes moving air through the diffusion tube, reversing the direction of air flow, then moving air through the distributor tube.

34. (New) The method of claim 33, wherein each of said air flow paths passes through two diffusion tubes and two distributor tubes.

35. (New) The method of claim 33, wherein each of said air flow paths passes through an opening in a panel.

36. (New) The method of claim 33, wherein air is moved through said cartridge by an air mover exterior to said cartridge.

37. (New) The method of claim 36, wherein said air mover pushes air into said cartridge.

38. (New) The method of claim 37, wherein said air mover extracts air from said cartridge.

39. (New) The method of claim 33, wherein step (b) includes moving air through the diffusion tube, changing the direction of air flow 180°, then moving air through the distributor tube.

40. (New) The method of claim 39, wherein step (b) includes moving air through the diffusion tube, changing the direction of air flow 180°, moving air through the distributor tube, changing the direction of air flow 90°, then moving air across an active surface of at least one metal-air cell.

41. (New) A method for controlling air flow in a metal air battery, comprising:
confining a metal air cell within a cartridge, the cartridge having an air inlet opening at a first side and an air outlet opening at a second side opposite the first side; and
moving air through the air inlet opening, across an active surface of the metal air cell, and through the air outlet opening.

42. (New) The method of claim 41, wherein air is moved by an air mover.

43. (New) The method of claim 41, further comprising, after moving air across the active surface of the metal air cell, moving air in a first direction, and moving air in a second direction opposite the first direction.

44. (New) The method of claim 41, further comprising changing the direction of air flow 90° after moving air across the active surface of the metal air cell.

45. (New) The method of claim 41, further comprising moving air through a tube extending along a length in the cartridge.

46. (New) A method for controlling air flow in a metal air battery, comprising:
confining a metal air cell within a cartridge;
moving air across an active surface of the metal air cell;
then moving air in a first direction; and
then moving air in a second direction opposite the first direction.

47. (New) The method of claim 46, further comprising moving air through an air outlet opening of the cartridge after moving air in the second direction.

48. (New) The method of claim 46, wherein air is moved by an air mover.

49. (New) The method of claim 46, further comprising changing the direction of air flow 90° after moving air across the active surface of the metal air cell.

50. (New) A method for controlling air flow in a metal air battery, comprising:
confining a metal air cell within a cartridge;
moving air in a first direction;
then moving air in a second direction opposite the first direction; and
then moving air across an active surface of the metal air cell.

51. (New) The method of claim 50, further comprising, after moving air across the active surface of the metal air cell, moving air in a third direction, and moving air in a fourth direction opposite the third direction.

52. (New) The method of claim 51, wherein the first direction is opposite the third direction.

53. (New) A method of controlling air flow in a metal air battery, comprising:
confining a metal air cell within a cartridge;
moving air across an active surface of the metal air cell;
then moving air in a first direction; and
then moving air in a second direction 90° from the first direction.

54. (New) The method of claim 53, further comprising moving air through an air outlet of the cartridge after moving air in the second direction.